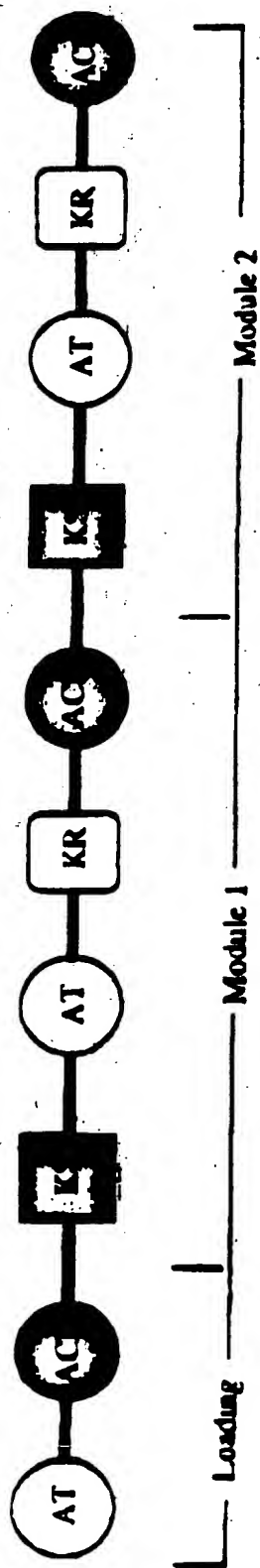


Post-PKS Biosynthesis of Erythromycins

Figure 1B

DEBS1:



Generic Modular PKS

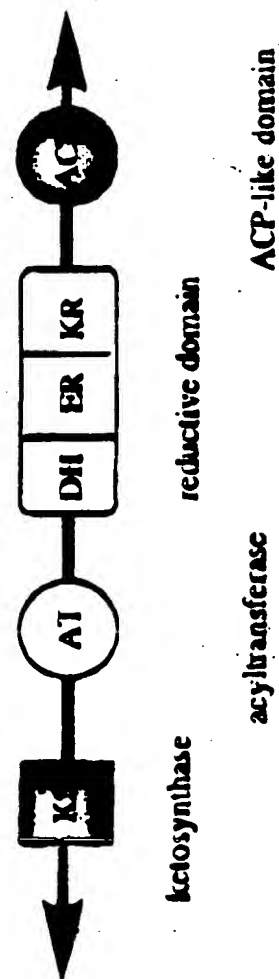


FIGURE 2

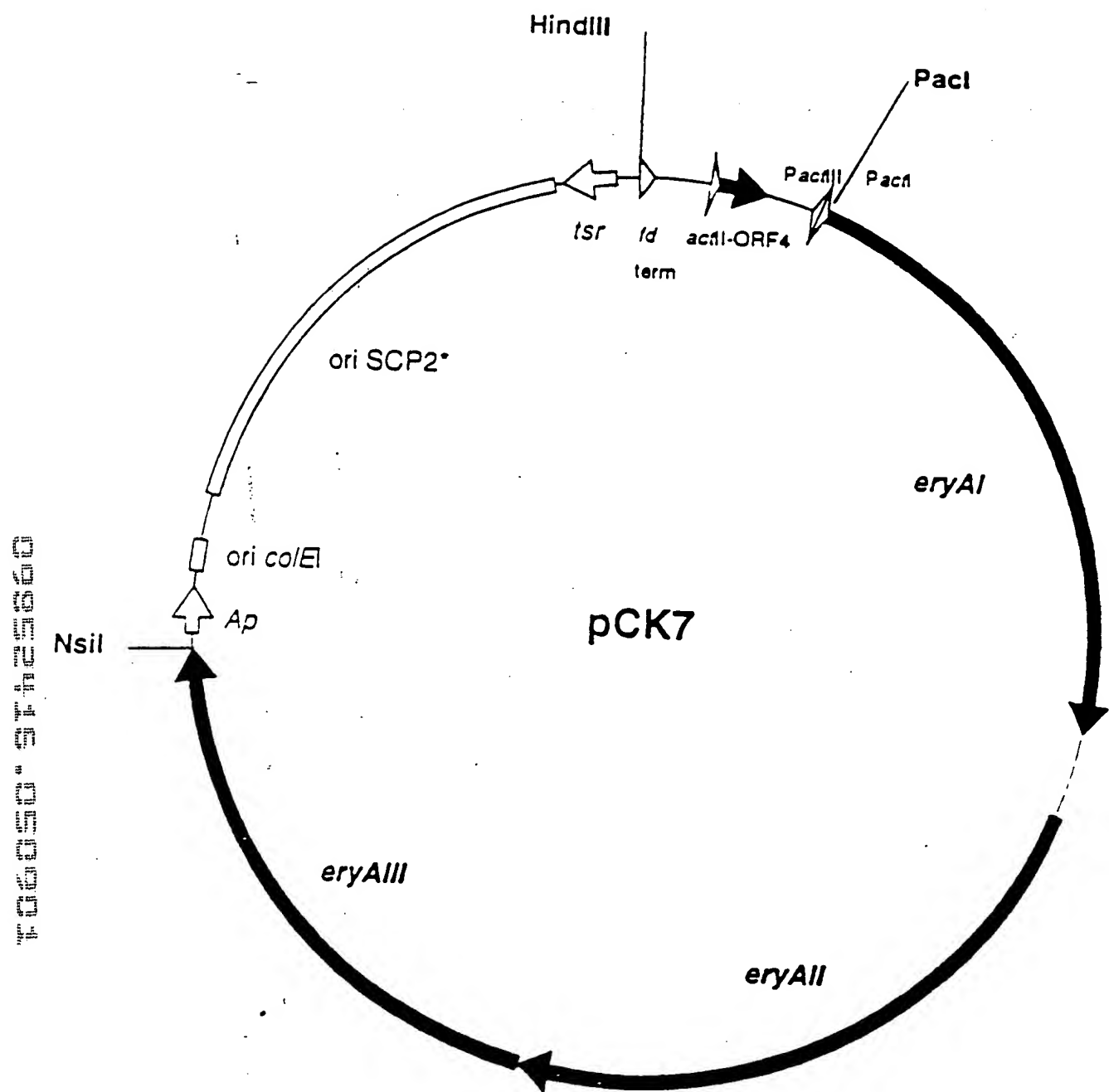
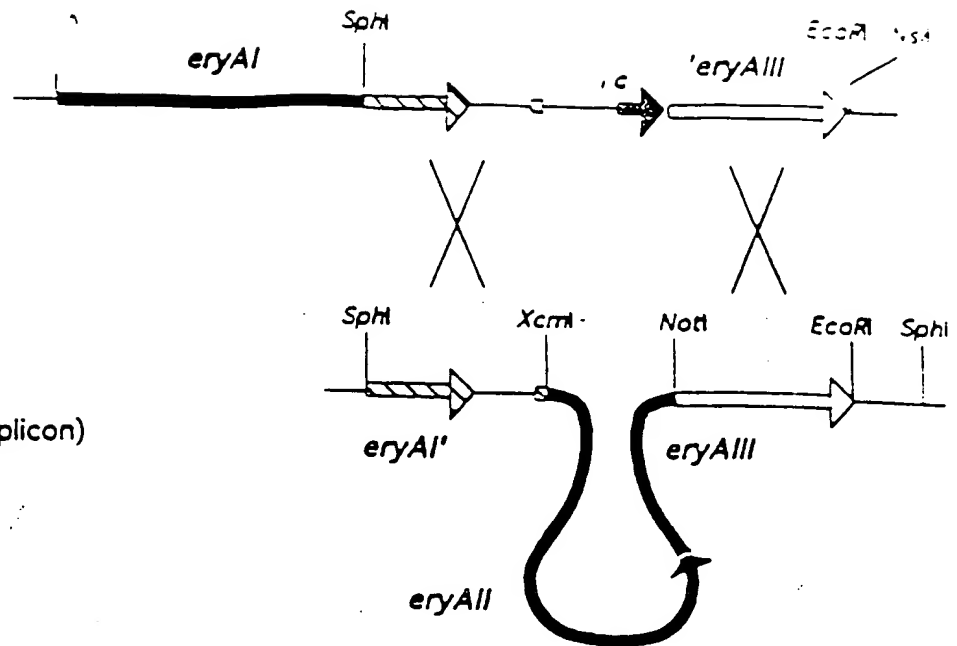


FIGURE 3

RECIPIENT: pCK5
(Ap^R, Tc^R)

DONOR: pCK6
(Cm^R, temperature-sensitive replicon)



Ap^R, Cm^R @ 30°C

Ap^R, Cm^R @ 44°C

Ap^R @ 30°C

Ap^R, Cm^S, Tc^S @ 44°C

FIGURE 4

Figure 5

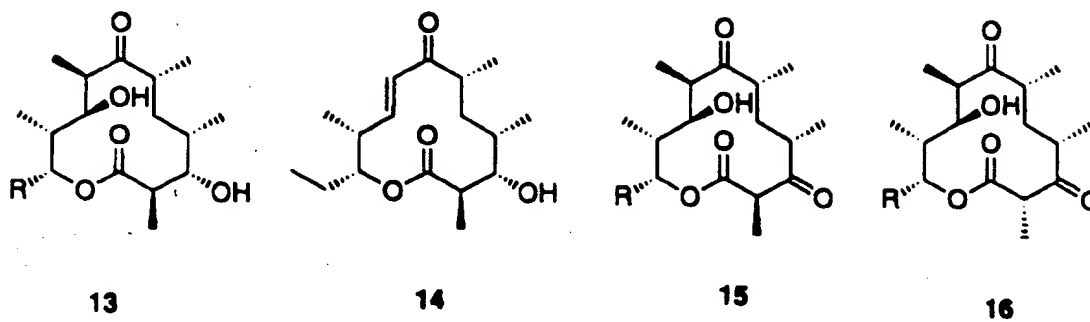
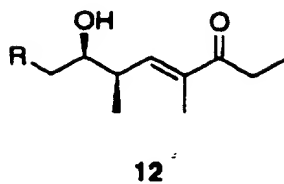
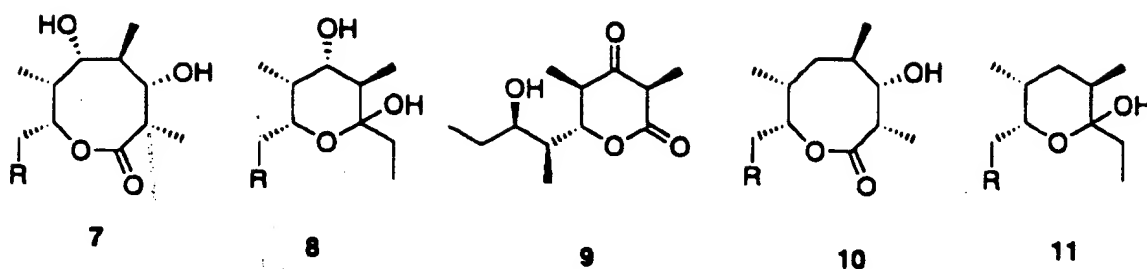
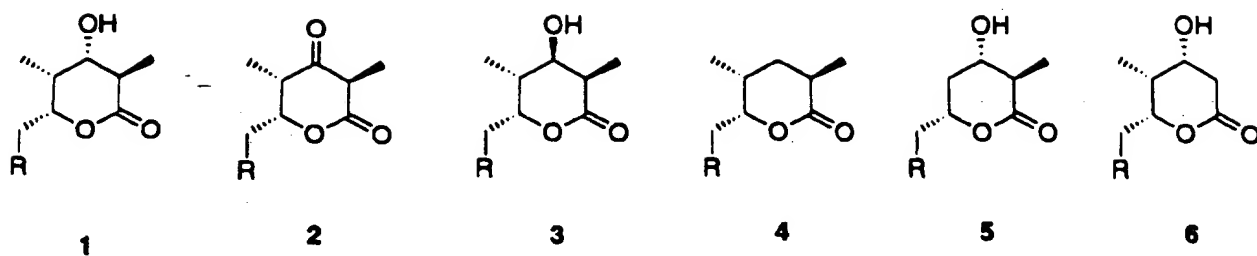


FIGURE 6A

32

33

34

35

36

37

38

39

40

41

42

43

44

45

46

47

DATE 24

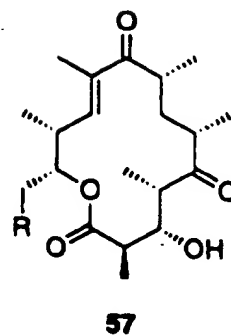
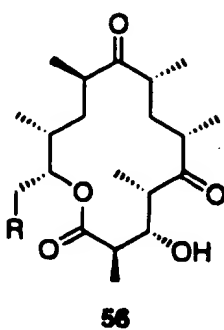
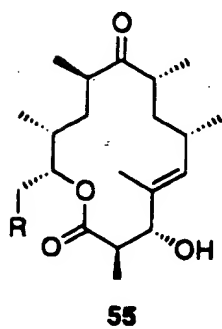
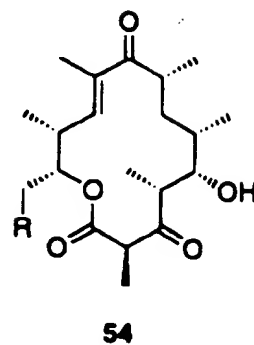
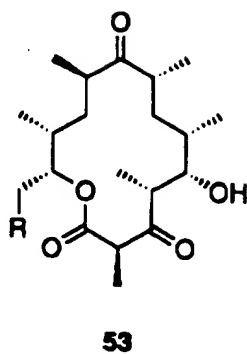
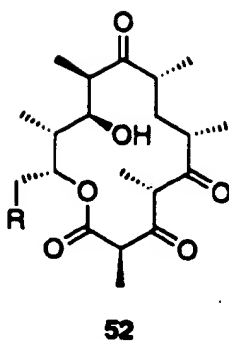
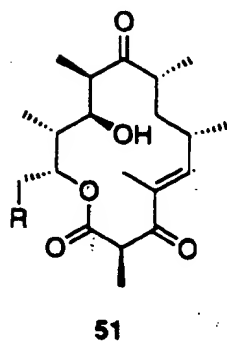
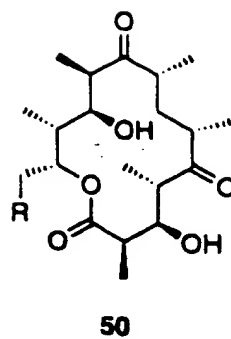
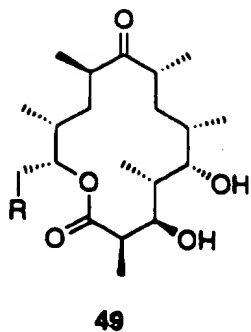
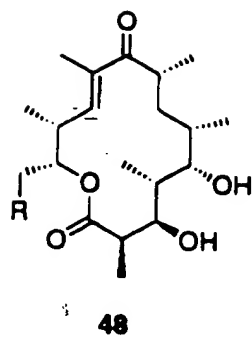


FIGURE 6D

1000000 512500

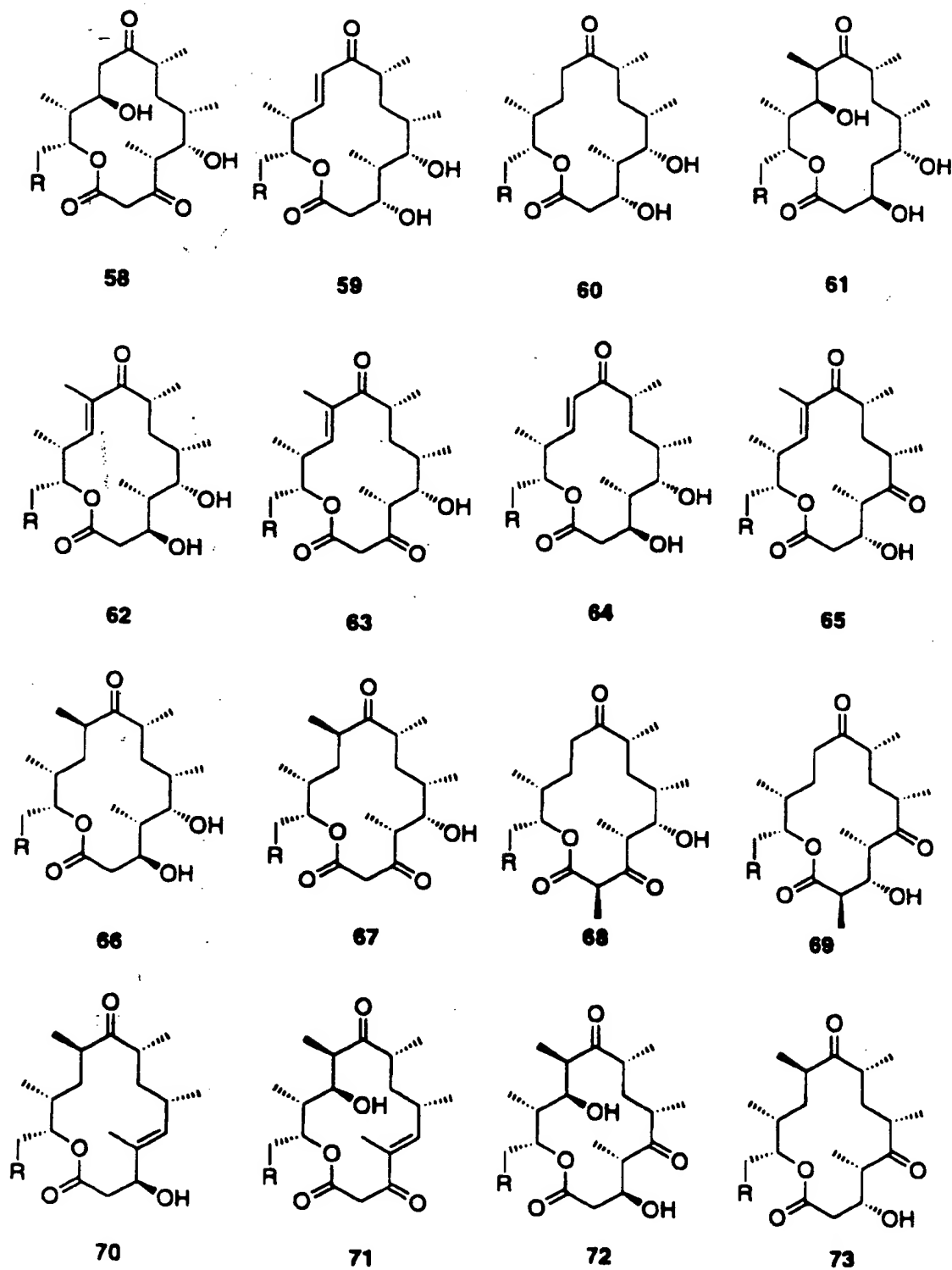


FIGURE 6E

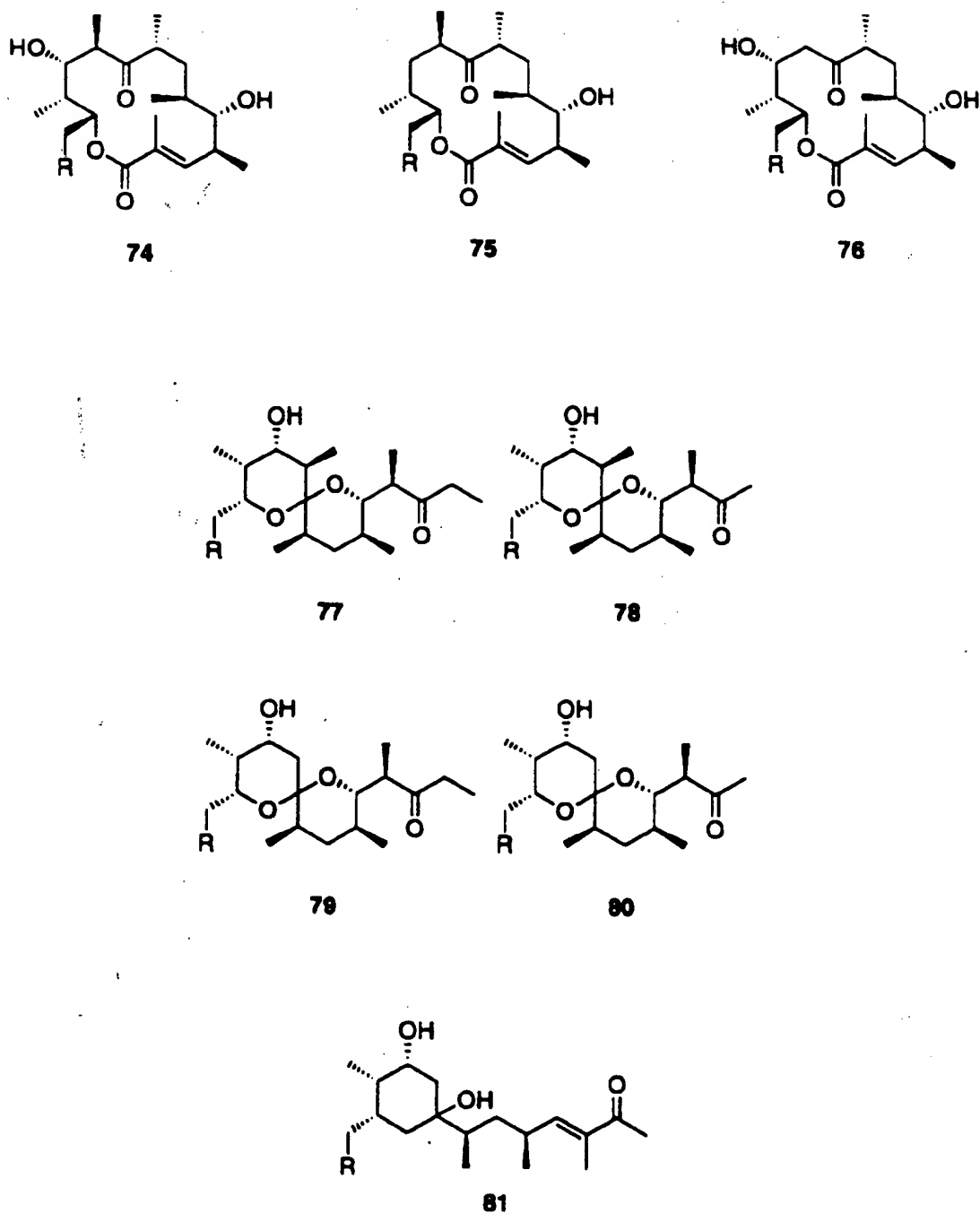
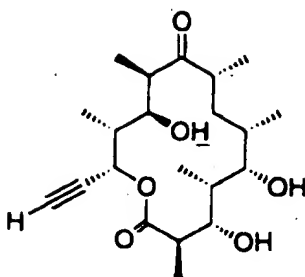
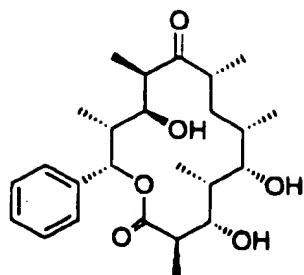


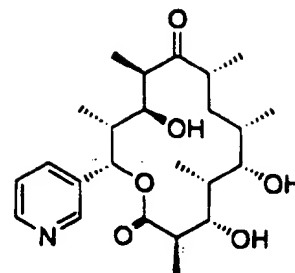
FIGURE 6F



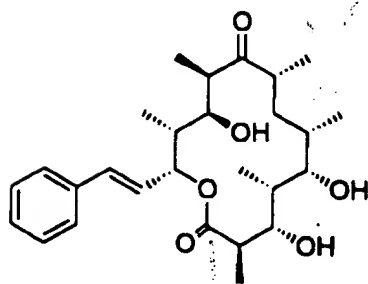
96



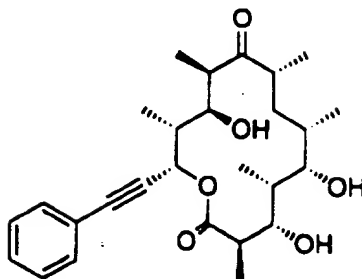
97



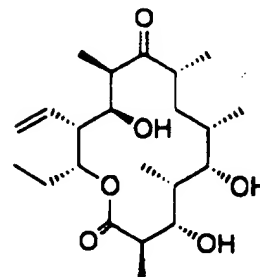
98



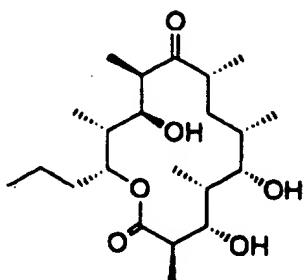
99



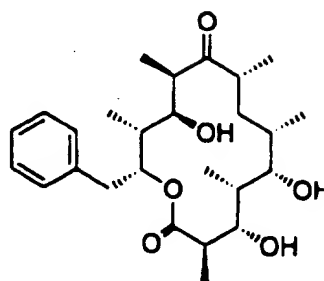
100



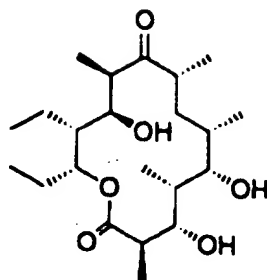
101



102

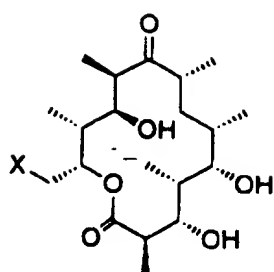


103

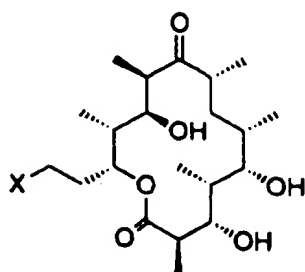


113

66

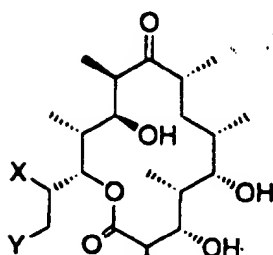


104



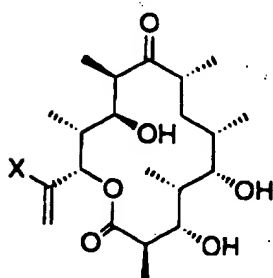
105

X = F, Cl, Br, N₃, H, O-alkyl,
S-alkyl, CN, O-acyl, O-aryl,
NH₂, NH-alkyl, N(alkyl)₂



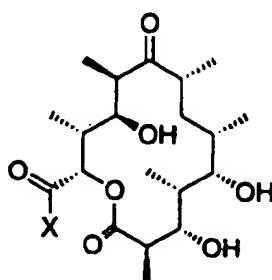
106

X = F; Y = H, Br, I, OH, O-alkyl, O-aryl, N₃, CN, S-alkyl, S-aryl
X = OH, Y = OH
X, Y = -O-, -NH-, -NR-

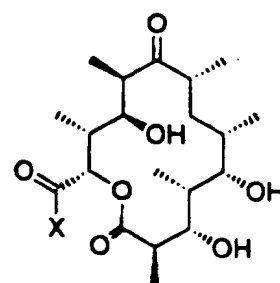


107

X = F, Cl, Br

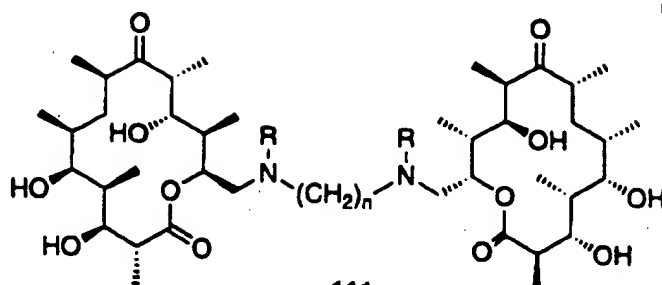


108: X=H
109: X=OH



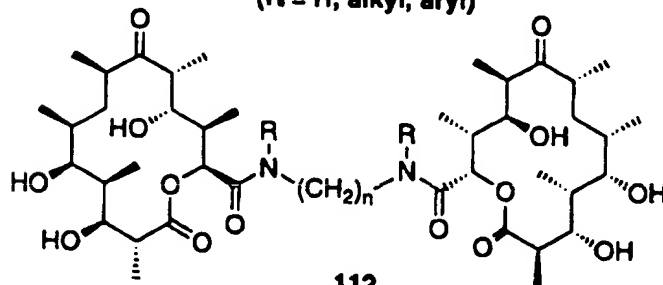
110

X = O-alkyl, O-aryl, NH₂,
NH-alkyl, N-(alkyl)₂,
NH-aryl



111

(R = H, alkyl, aryl)



112

(R = H, alkyl, aryl)

64

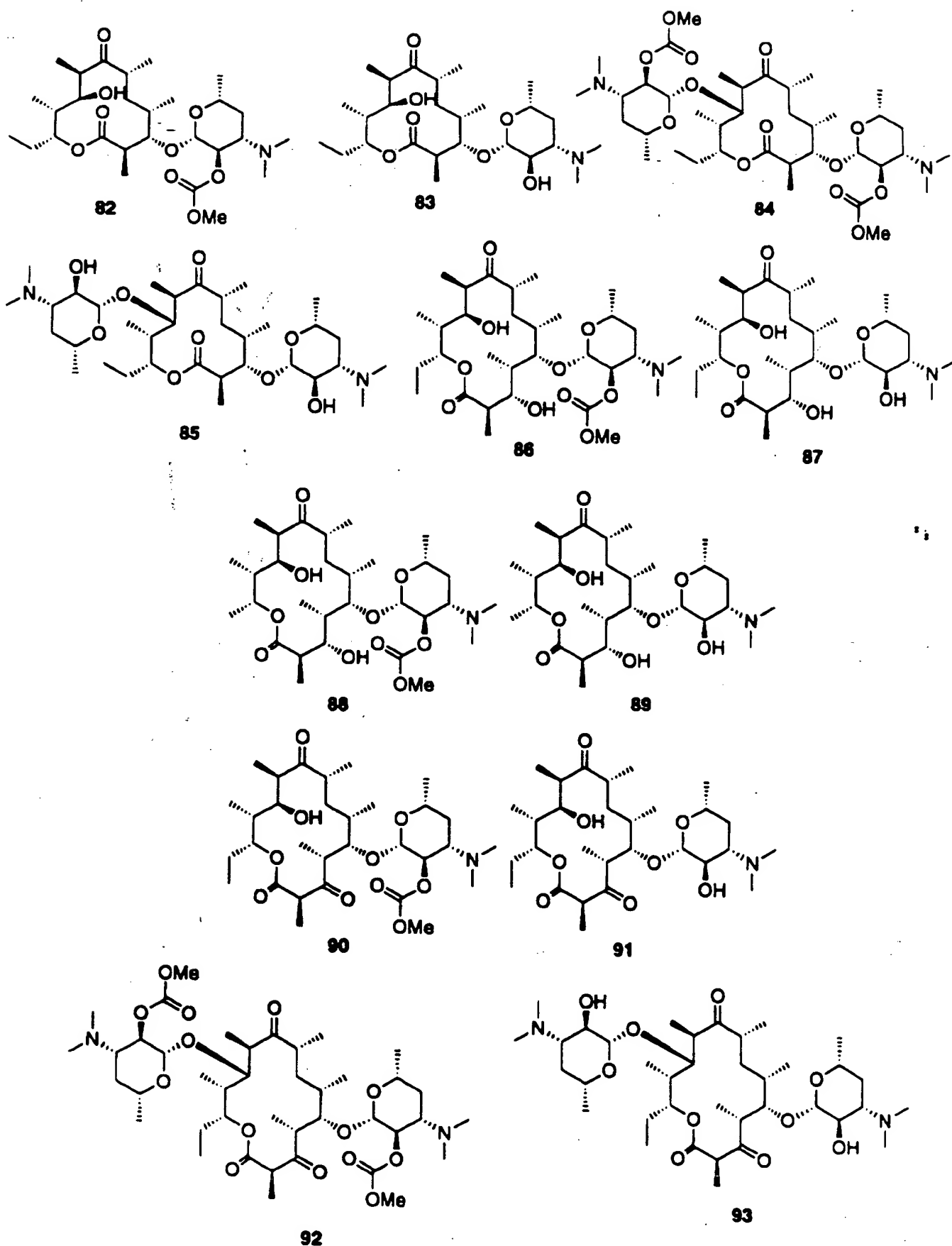
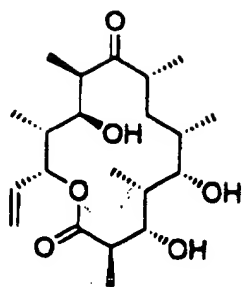
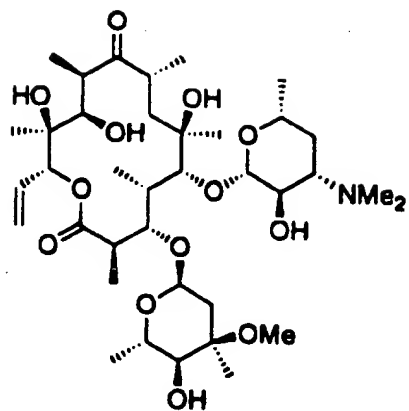


FIGURE 8



94

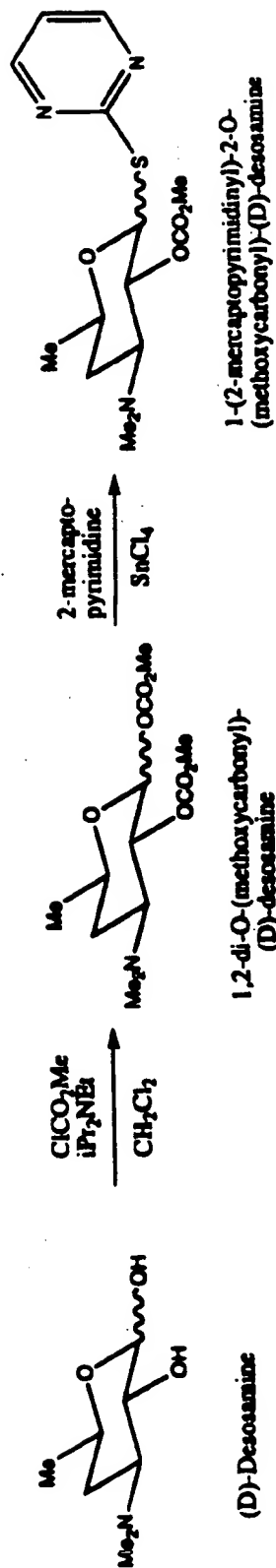


95

FIGURE 9

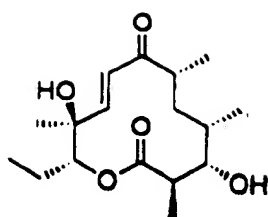
Figure 10

Preparation of 1-(2-mercaptopyrimidinyl)-2-O-(methoxycarbonyl)-(D)-desosamine

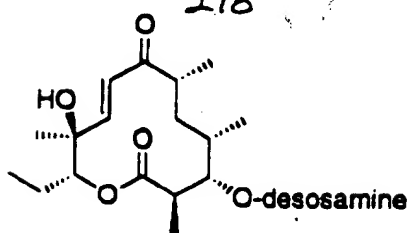


CC1=C(C)C(=O)C(=C)C(=O)OC1C

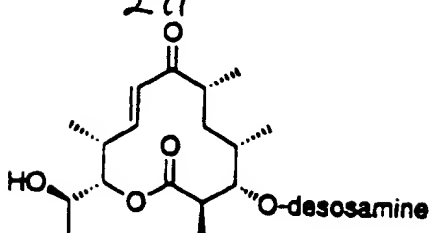
210



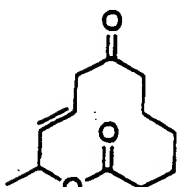
211



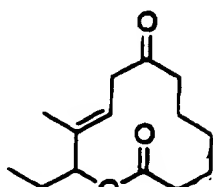
212



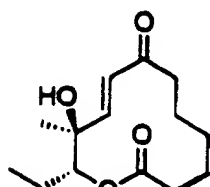
213



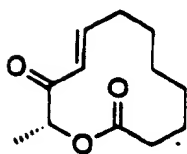
204



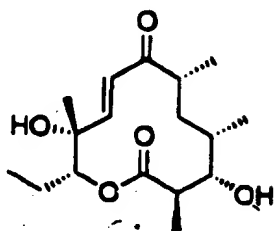
202



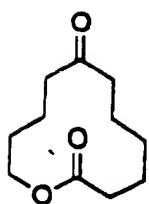
- 203



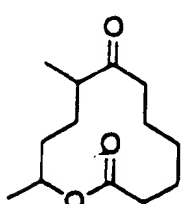
204



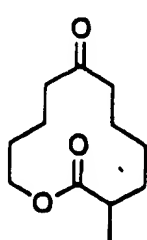
205



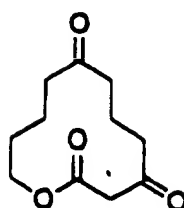
206



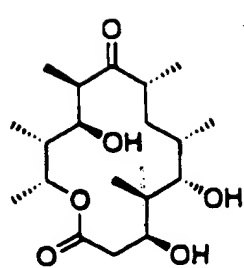
207



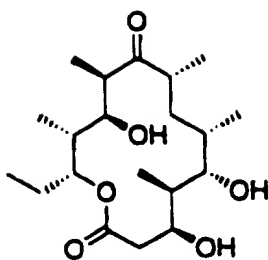
202



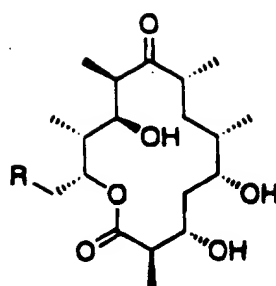
209



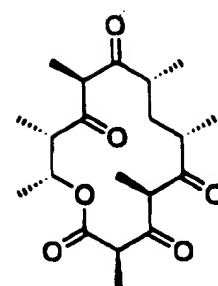
301



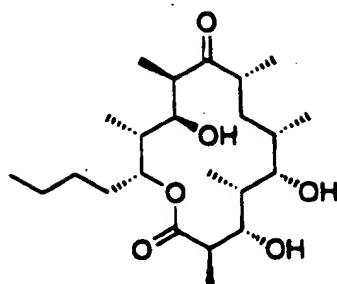
302



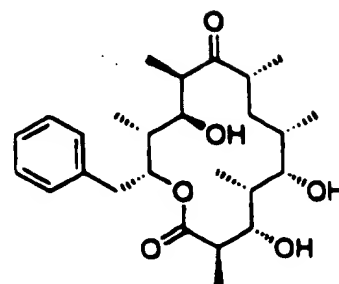
303



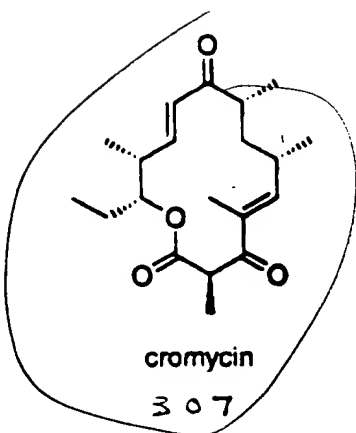
304



305

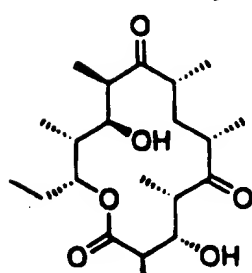


306

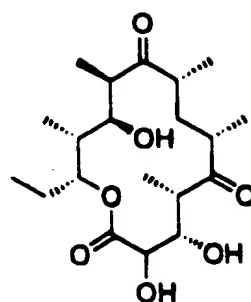


cromycin

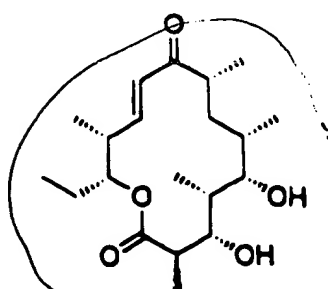
307



308
5-deoxy-5-oxo-6dEB

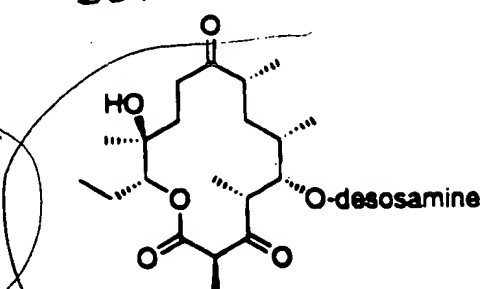


2-demethyl-2-hydroxy-
5-deoxy-5-oxo-6dEB
309



3-dihydroarbenolide

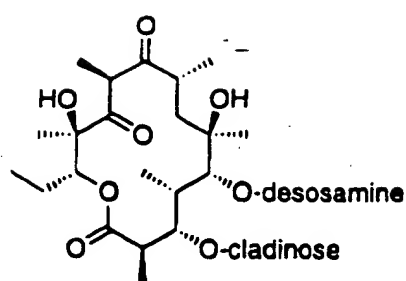
310



10,11-dihydropicromycin

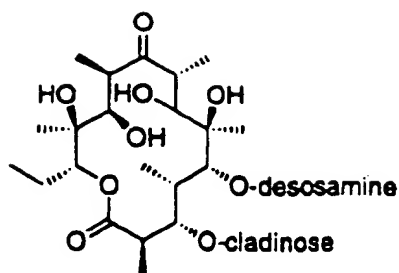
311

Figure 12 A



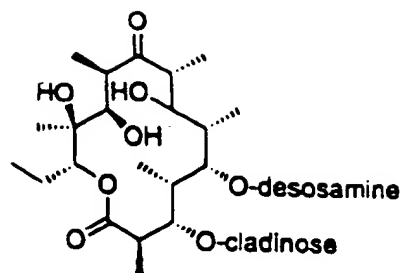
11-oxo-11-deoxyerythromycin A

312



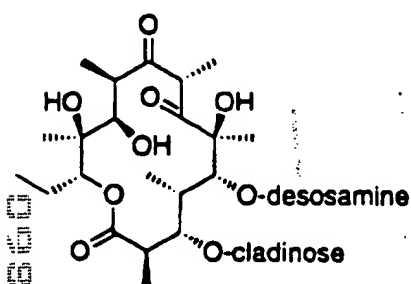
7-hydroxyerythromycin A

313



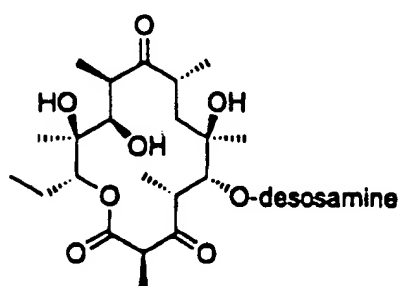
6-deoxy-7-hydroxyerythromycin A

314



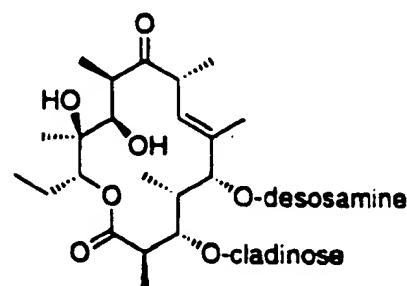
7-oxo-erythromycin A

315



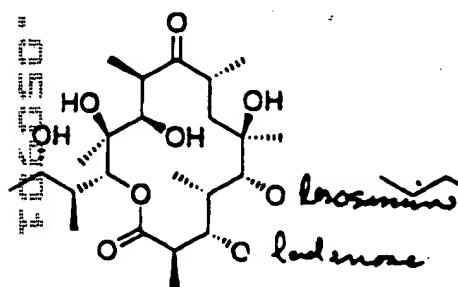
3-oxo-3-deoxy-5-desosaminyl-erythronolide A

316



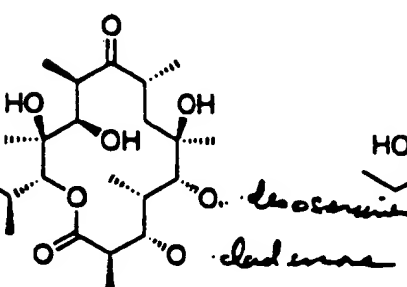
6,7-anhydro-erythromycin A

317



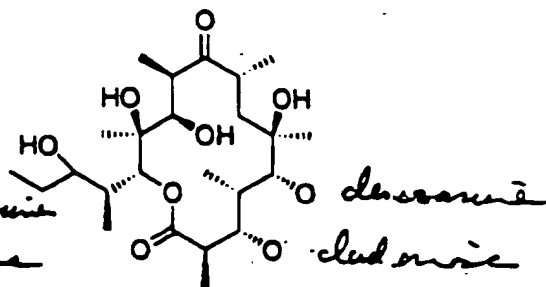
(14S,15S)-14-(1-hydroxyethyl)-erythromycin A

318



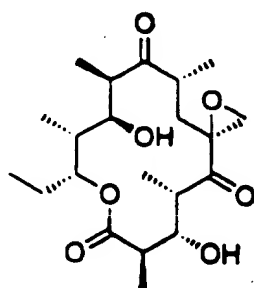
14-(1-propyl)erythromycin A

319



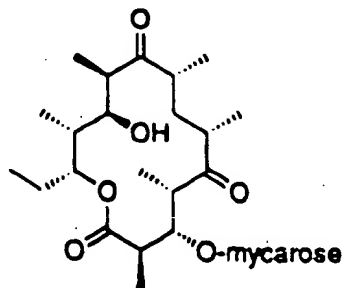
14-(1-hydroxypropyl)erythromycin A

320



5,6-dideoxy-6,6a-epoxy-5-oxo-erythronolide B

322



5,6-dideoxy-5-oxo-3-mycarosyl-erythronolide B

321